

Appl. No. 09/888,714
Atty. Docket No. CM2380
Amdt. dated 04/05/2004
Reply to Notice of 12/03/2003
Customer No. 27752

REMARKS

Applicants note that the Notice of Abandonment for the present application, mailed on September 30, 2003, was issued in error. The Notice of Abandonment stated that the Application was abandoned in view of Applicants' failure to timely file a response within the statutory period of six months from the mailing date of the Final Rejection dated August 14, 2002. Applicants had filed a Notice of Appeal on February 14, 2003 and subsequently filed a Request for Continued Examination on September 15, 2003 (September 14 fell on a Sunday). Since the Request for Continued Examination was timely filed, the Notice of Abandonment was issued in error.

As noted by the Non-final Office Action mailed on December 3, 2003, Claims 1-4 and 7-12 are pending in the present application. Applicants have cancelled Claim 2 and incorporated its limitations to form currently amended Claim 1. Claims 3 and 4 which previously depended from Claim 2 have been amended to depend from currently amended Claim 1. No new matter has been entered and no additional claims fees are believed to be due. Applicants strongly believe that the present Amendments, and accompanying Remarks, have placed the present application in condition for allowance. Accordingly, timely and favorable action is respectfully requested.

Rejections under 35 U.S.C. § 103(a) over Von Der Osten

Claims 1-4 and 7-12 have been rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent 6,015,783 issued to von der Osten et al. (hereinafter referred to as "von der Osten") "...for the reasons of record, cited in the previous office actions, paper (sp) no.6 and 8." The Non-Final Office Action gives the following rationale for this rejection. First, the Office Action asserts that "it is well known in the art that the most known and studied starch binding domains are found in cyclodextrin glucanotransferases and glucoamylases." Second, the Office Action asserts that "One of ordinary skill in the art is well aware that these enzymes possess polypeptide sequences having affinity for binding starch and thus incorporation of the enzyme incorporates the entire polypeptide sequence unless there are specific mutations or deletions." Finally, the Office Action asserts that "...since...von der Osten et al....specifically suggest[s] a detergent composition comprising cyclodextrin glucanotransferase enzyme, then...[it]...inherently teach[es] the introduction of the starch binding domain into the detergent composition as part of the glucanotransferase enzyme."

Before traversing the rejections, Applicants challenge the factual assertions made in the office action concerning what constitutes "common knowledge" in the art of detergent formulation. MPEP § 2144.03 provides guidelines as to when "...it is appropriate for an examiner to take official notice of facts not in the record or to rely on "common knowledge" in making a rejection..." § 2144.03 states that "[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." Furthermore, "it is never appropriate to rely

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solely on "common knowledge" in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based...an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support."

Applicants assert that the statements made by the Office Action concerning what it purports to be common knowledge in the art of detergent formulation have no evidentiary basis in the record and therefore do not meet the requirements of § 2144.03. Indeed these assertions are inconsistent with the very art upon which the Office Action bases its rejections. As discussed *infra*, Von der Osten discloses a "modified enzyme (enzyme hybrid)" which comprises a catalytically active amino acid sequence of a non-cellulolytic enzyme such as cyclodextrin glucanotransferase (hereinafter referred to as "CGTase") linked together with a starch binding domain (hereinafter referred to as a "SBD") from a cellulase. If the assertions made by the Office Action were true that CGTases are well known to have SBDs, then there would be no call for von der Osten to teach linking the catalytically active site of a CGTase with the SBD from another enzyme in order to make removal of stains from cellulosic fabric more efficient.

Assuming arguendo that even if the Office Action correctly and properly asserted what is commonly known in the art of detergent formulation, Applicants would nonetheless traverse the aforementioned rejections. The Office Action overlooks a key aspect taught by von der Osten, which is that incorporation of CGTase does not in fact inherently teach the introduction of a starch binding domain into the detergent composition as asserted by the Office Action. But rather, von der Osten teaches that only the enzymatically active portion of CGTase, i.e., the amylolytic portion, is included in the disclosed enzyme hybrid which comprises the disclosed detergent composition.

In general, Von der Osten discloses: "a process for removal or bleaching of soiling or stains present on cellulosic fabric, wherein the fabric is contacted in an aqueous medium with a modified enzyme (enzyme hybrid)...which comprises a catalytically active amino acid sequence of a non-cellulolytic enzyme useful in relation to the cleaning of fabric or textile linked to an amino acid sequence comprising a cellulose-binding domain. The invention further relates to a detergent composition comprising an enzyme hybrid of the type in question and a surfactant..." See Abstract. In particular, Von der Osten discloses which enzymes can serve as the respective sources of the catalytically active amino acid sequence and the cellulose-binding domain (hereinafter referred to as "CBD") that are linked together to comprise the "enzyme hybrid". The CBD may be derived from a cellulase which von der Osten defines as "an enzyme which catalyses the degradation of cellulose to glucose, cellobiose, triose and/or other cello-oligo-saccharides." See Col. 4 line 64 through Col. 5 line 2. A list of the cellulases purported to be of use in preparation of CBDs, which are in turn to be used in constructing the resultant enzyme hybrid, is disclosed by von der Osten from Column 4, line 64 through to Column 5, line 59. CGTase and other amylolytic enzymes, such as glucoamylases, are not cellulases and are absent from this list. Instead, Von der Osten lists CGTase and other amylolytic

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enzymes as potential sources of the catalytically active amino acid sequence linked to the cellulase-derived CBD to form the enzyme hybrid. See Col. 6, lines 27-44.

Applicants submit that Von Der Osten fails to teach or suggest a detergent composition comprising a cyclodextrin glucanotransferase enzyme, a detergent ingredient and a starch binding domain that is introduced into the claimed detergent composition as part of the present cyclodextrin glucanotransferase enzyme, as set forth in currently amended claim 1. Reconsideration and withdrawal of the rejection to Claims 1, 3, 4 and 7-12 under 35 U.S.C. § 103(a) are therefore respectfully requested.

Rejections under 35 U.S.C. § 103(a) over Danielsen

Claims 1-4 and 7-12 have been rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent 6,410,291 issued to Danielsen et al. (hereinafter referred to as "Danielsen") "...for the reasons of record, cited in the previous office action, paper no. 8." The Office Action asserts that "it would have been obvious to one of ordinary skill in the art, at the time the invention was made to formulate a detergent composition comprising a cyclodextrin glucanotransferase enzyme, a nonionic surfactant, a protease, a bleaching agent and a glucoamylase derived from *Aspergillus niger* in the specific proportions as recited by the instant claims, with a reasonable expectation of success..." based upon the disclosure by Danielsen, despite the fact that "Danielsen et al. do not specifically teach a detergent composition having the specific ratios and proportions as recited by the instant claims." Applicants respectfully traverse the rejections on the basis that one of ordinary skill in the art could not arrive at the present invention as disclosed in presently amended Claim 1 without undue experimentation.

Danielsen "relates to isolated polypeptides having haloperoxidase activity..[it] also relates to methods for producing and using the polypeptides." See Abstract. In its "Detailed Description of the Invention" section, Danielsen discloses: "Polypeptides Having Haloperoxidase Activity"; the various "Nucleic Acid Sequences" which encode polypeptides having haloperoxidase activity; "Methods for Producing Mutant Nucleic Acid Sequences"; "Nucleic Acid Constructs"; "Expression Vectors"; "Methods of Production"; and "Plants" which contain "a nucleic acid sequence encoding a polypeptide having haloperoxidase activity" (see Col. 17, lines 60-65). In its "Compositions" section, Danielsen suggests compositions that are enriched with haloperoxidase activity. See Col. 19, lines 60-67. Danielsen discloses that the composition may "comprise multiple enzymatic activities, such as an aminopeptidase, amylase, carbohydrolase, carboxypeptidase, catalase, cellulase, chitinase, cutinase, cyclodextrin glycosyltransferase, deoxyribonuclease, esterase, alpha-galactosidase, beta-galactosidase, glucoamylase, alpha-glucosidase, beta-glucosidase, haloperoxidase, invertase, laccase, lipase, mannosidase, oxidase, pectinolytic enzyme, peptidoglutaminase, peroxidase, phytase, polyphenoloxidase, proteolytic enzyme, ribonuclease, polyphenoloxidase, proteolytic enzyme,

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ribonuclease, transglutaminase, or xylanase." See Col. 20, lines 1-25. Danielsen further suggests that any of these enzymes can be derived from one of four genera, preferably from one of the twenty-two disclosed species. See Col. 20, lines 1-25.

In the "Detergent Composition" section, Danielsen admits that in formulating the detergent, "in general the properties of the chosen enzyme(s) should be compatible with the selected detergent, (i.e., pH-optimum, compatibility with other enzymatic and non-enzymatic ingredients, etc.), and the enzyme(s) should be present in effective amounts." See Col. 20, lines 58-62. In other words, efficacy must be optimized by selecting the proper amounts of compatible detergent components. However, Danielsen provides no guidance as to which enzymes are compatible with which detergent compositions in what amounts. Danielsen merely provides broad ranges of percentages in general of various enzymes (Col. 23, lines 35-41); anionic surfactants (Col. 22, lines 55-60); non-ionic surfactants (col. 22, lines 61-67); and detergent builders (Col. 23, lines 1-6). In addition, Danielsen merely suggests that the detergent may contain a bleaching system, may comprise a polymer and may contain other conventional detergent ingredients. In sum, Danielsen does not provide any guidance as to how to formulate a detergent with effective/compatible amounts, or how to determine the effective/compatible amounts, of the disclosed list of various enzymatic and non-enzymatic ingredients in its detergent.

For these reasons, Applicants assert that one of ordinary skill in the art could not arrive at the present invention based upon the Danielsen disclosure. The present invention discloses a detergent in which selected CGTases, nonionic surfactants, proteases and bleaching agents are not only compatible, but present in amounts that provide for very effective cleaning via their synergistic effect. To arrive at the present invention based upon the disclosure in Danielsen, one of ordinary skill in the art would be forced to engage in undue experimentation. To wit, one of ordinary skill in the art would have to select the proper CGTase enzyme from the laundry list of Danielsen enzymes, which in turn would have to be derived from the proper organism selected from the laundry list of Danielsen genera and species, that would in turn have to be compatible with the list of disclosed nonionic surfactants, proteases, and bleaching agents, which moreover would have to be present in the proper amounts to ensure efficacy. All of this would have to be done by one of ordinary skill in the art without any guidance from Danielsen as to which enzymes/components were compatible in what amounts. Thus the present invention cannot be obvious in light of Danielsen.

In light of the above remarks, Applicants request that the Examiner reconsider and withdraw the rejections under § 103(a) over Danielsen. Early and favorable action in this case is respectfully requested.

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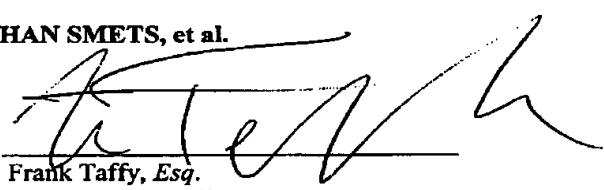
CONCLUSION

Applicants have made an earnest effort to place the present claims in condition for allowance. WHEREFORE, entry of the amendments provided herewith, reconsideration of the claims as amended in light of the Remarks provided, withdrawal of the claims rejections, and allowance of Claims 1-4 and 7-12 as amended, are respectfully requested. In the event that issues remain prior to allowance of the noted claims, then the Examiner is invited to call Applicants' undersigned attorney to discuss any remaining issues.

Respectfully submitted,

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